

AMENDMENTS TO THE CLAIMS

Please cancel claims 6-20 without prejudice or disclaimer, add claims 21-25, and amend claims 3-5 as follows:

1. – 2. (Canceled).

3. (Currently Amended) An air compressor, comprising:

a tank portion for reserving compressed air used in a pneumatic tool;

a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion;

a drive portion comprising a motor for driving said compressed air generation portion;

a pressure sensor for detecting internal pressure P of said tank portion; and

a control circuit portion for controlling said drive portion, ~~wherein~~ the control circuit portion comprising: comprises

first means for storing a plurality of values indicating different rotational speeds of the motor;

second means for a unit for calculating internal pressure P of said tank portion based on a detection signal output from a pressure sensor, calculating a rate $\Delta P/\Delta T$ of pressure change ΔP [[to]] and time ΔT [[,]] and

third means for selecting one of the values based on the internal pressure P and the rate $\Delta P/\Delta T$ of pressure change, and controlling the ~~deciding~~ a rotational speed of said motor in accordance with the selected value based on the pressure P and the rate $\Delta P/\Delta T$ of pressure change ΔP .

4. (Currently Amended) The air compressor according to claim 3, wherein said control circuit portion further comprises a memory for storing information indicating relations among the

internal pressure P of said tank portion, the rate $\Delta P/\Delta T$ of pressure change $[[\Delta P]]$, and the rotational ~~speed N~~ speeds of said motor, and

wherein one of the rotational speeds $[[speed]]$ of said motor $[[N]]$ is decided by means $[[of]]$ for searching said memory.

5. (Currently Amended) A method of controlling an air compressor, said air compressor including a tank portion for reserving compressed air used in a pneumatic tool, a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion, a drive portion including a motor for driving said compressed air generation portion, and a control circuit portion for controlling said drive portion, the method comprising:

detecting pressure P of said compressed air reserved in said tank portion;

storing a plurality of values indicating different rotational speeds of the motor;

calculating $[[the]]$ a rate $\Delta P/\Delta T$ $[[of]]$ between pressure change ΔP in pressure P to and
time ΔT ;

selecting one of the values based on the pressure P of said tank portion and the rate $\Delta P/\Delta T$ of pressure change; and

~~deciding a~~ controlling the rotational speed of said motor in accordance with the selected
~~value of said drive portion based on the pressure P of said tank portion and the rate $\Delta P/\Delta T$ of~~
~~pressure change.~~

6. – 20. (Canceled).

21. (New) The air compressor according to claim 3, wherein the plurality of values comprise integral times of a predetermined rotational speed.

22. (New) The air compressor according to claim 3, wherein said control circuit portion further comprises fourth means for judging whether the internal pressure P in the tank is higher than a predetermined value, and for controlling the motor to stop when the internal pressure P is higher than the predetermined value.
23. (New) The air compressor according to claim 3, wherein said control circuit portion calculates a first rate $\Delta P1/\Delta T1$ of pressure change $\Delta P1$ to a relatively short time $\Delta T1$ and a second rate $\Delta P2/\Delta T2$ of pressure change $\Delta P2$ to a time $\Delta T2$ longer than the time $\Delta T1$, and selects one of the rotational speeds based on the first and second rates of pressure change.
24. (New) The air compressor according to claim 4, wherein the memory stores a plurality of patterns indicating relations among the internal pressure P of said tank portion, the rate $\Delta P/\Delta T$ of pressure change, and the rotational speeds of said motor, and
wherein the one of the patterns is selected based on a currently operating motor speed.
25. (New) A method of controlling an air compressor, said air compressor including a tank portion for reserving compressed air used in a pneumatic tool, a compressed air generation portion for generating compressed air and supplying said compressed air to said tank portion, a drive portion including a motor for driving said compressed air generation portion, and a control circuit portion for controlling said drive portion, the method comprising:
detecting pressure P of said compressed air reserved in said tank portion;
calculating a rate $\Delta P/\Delta T$ between pressure change ΔP and time ΔT ;
storing a plurality of tables each indicating relations among the pressure P , the rate $\Delta P/\Delta T$ and different rotational speeds of the motor;
selecting one of the plurality of tables based on a currently operating motor speed; and

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searching for the rotational speed of the motor by referring to the selected table.